

# ATTACK

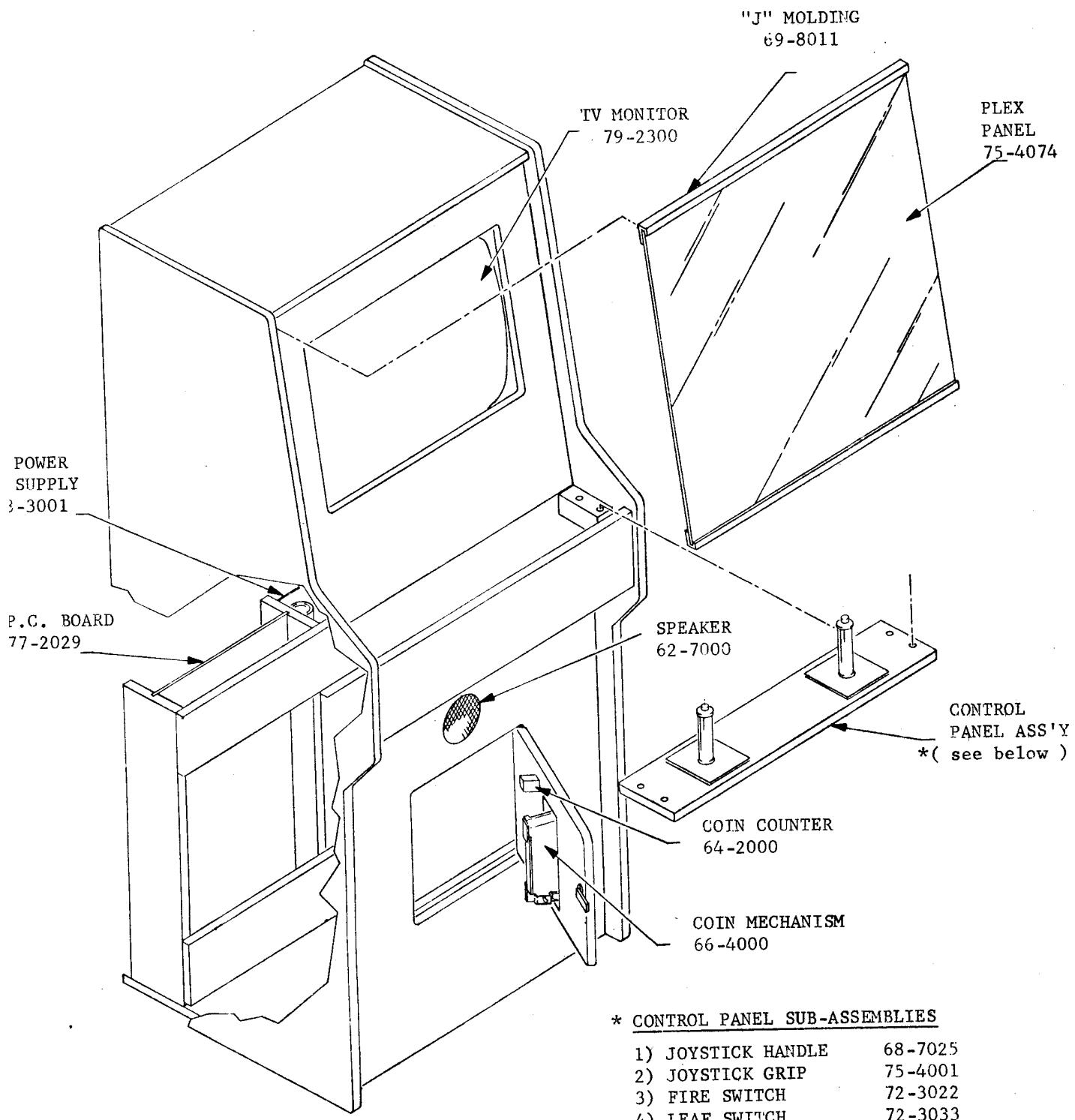
BY *Exidy*

**SERVICE MANUAL**

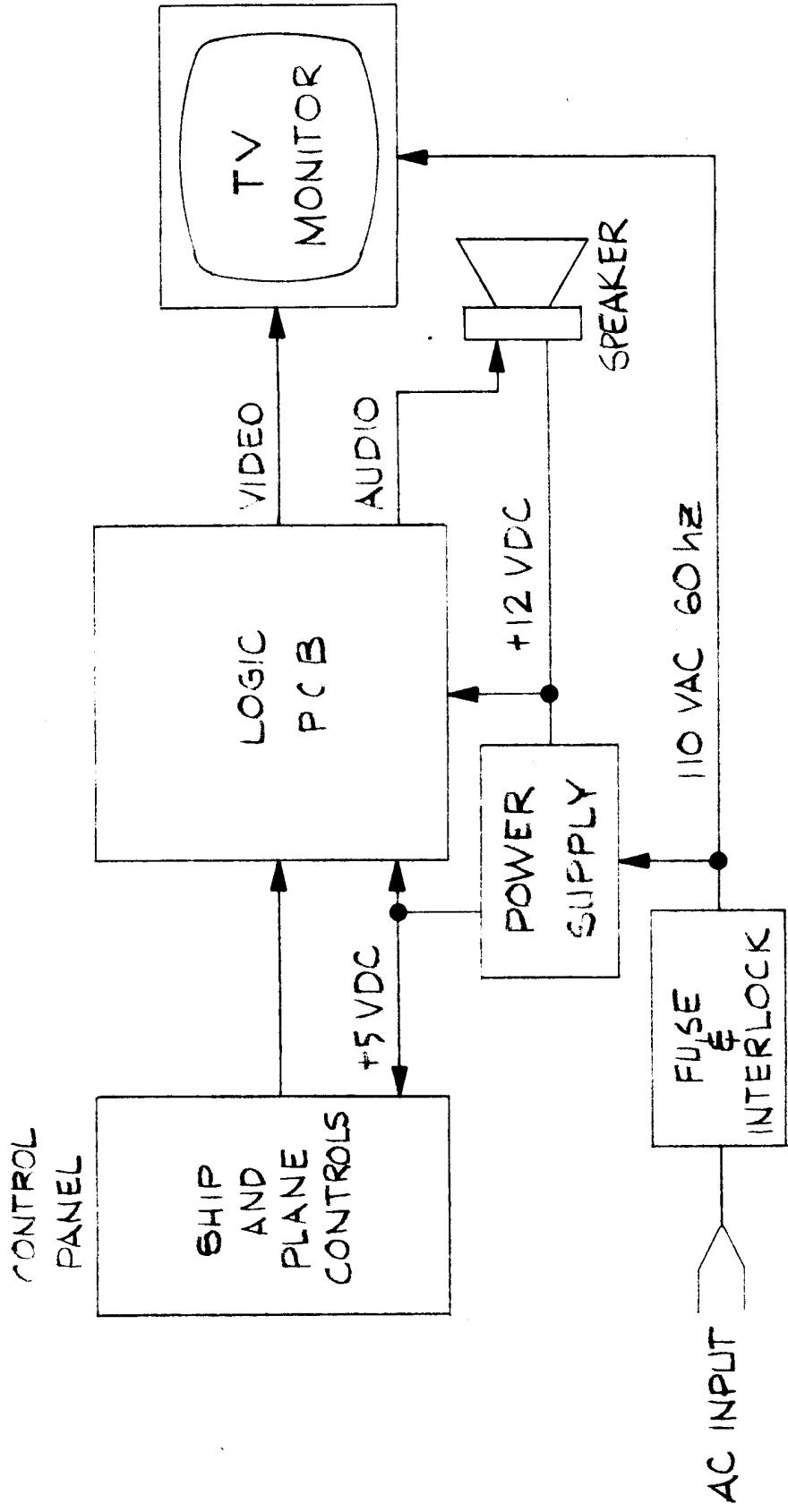
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# ATTACK SYSTEM BLOCK DIAGRAM



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### I. Adjustments

#### A. Power Supply Adjustment

Proper operation of this game is absolutely dependent on proper adjustment of the +5vdc power supply.

Before attempting to operate or troubleshoot this game, measure and adjust, as necessary, the +5vdc power supply voltage.

Measure voltage with meter leads contacting +5vdc and ground traces on P.C.B., near the 6 pin connector.

The power supply voltage is set at the factory, but shocks due to shipping and handling may cause this setting to vary.

#### B. Volume Adjustment

Sound volume is adjustable using the pot on the P.C.B. nearest the 22 pin connector.

#### C. Game Time Adjustment

Game time (length of game) is adjustable using the pot on the P.C.B. nearest the 6 pin connector.

ATTACKTroubleshooting Tips

SYMPTOM	POSSIBLE CAUSE	SOLUTION
<u>Nothing happens</u>	Blown fuse Interlock switch not closing Bad TV Monitor	Replace check switch alignment Repair or replace
<u>Game blows fuses</u>	Bad power supply Bad P.C.B.	Repair or replace Repair or replace
Game has sound but no picture	Bad TV Monitor No +5vdc	Repair or replace Check output of power supply for +5vdc. If not present, replace power supply.
Game has picture but no sound	Bad P.C.B. No +12vdc	Repair or replace Check power supply harness. Wire attached to cap should have +12vdc.
Game does not start with coin	Bad speaker Bad P.C.B. Bad coin mechanism	Replace Repair or replace Check microswitch and mechanism.
All controls completely inoperative	Bad P.C.B. Ground wire to control harness open (disconnected)	Repair or replace Repair
Some controls inoperative	Bad P.C.B. Bad leaf switches in control panel	Repair or replace Replace (even if just bent). Once bent, switch is unreliable.
Game is erratic. Seems to work OK sometimes, other times not.	Low +5vdc power Bad P.C.B.	Adjust power supply. Measure voltage with test leads on P.C.B. (near 6 pin connector). Repair or replace
Game is static sensitive	Carpet Weather Nearby devices generating high voltages and/or high frequencies.	Solder 12" long 22 awg. insulated wire to pin 20 of J2 (P.C.B. 22 pin connector). Leave one end hanging loose, taking care that wire is properly insulated. If game shuts off too easily then, trim the wire shorter as necessary.

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P.C. BOARD CONNECTOR PINOUT

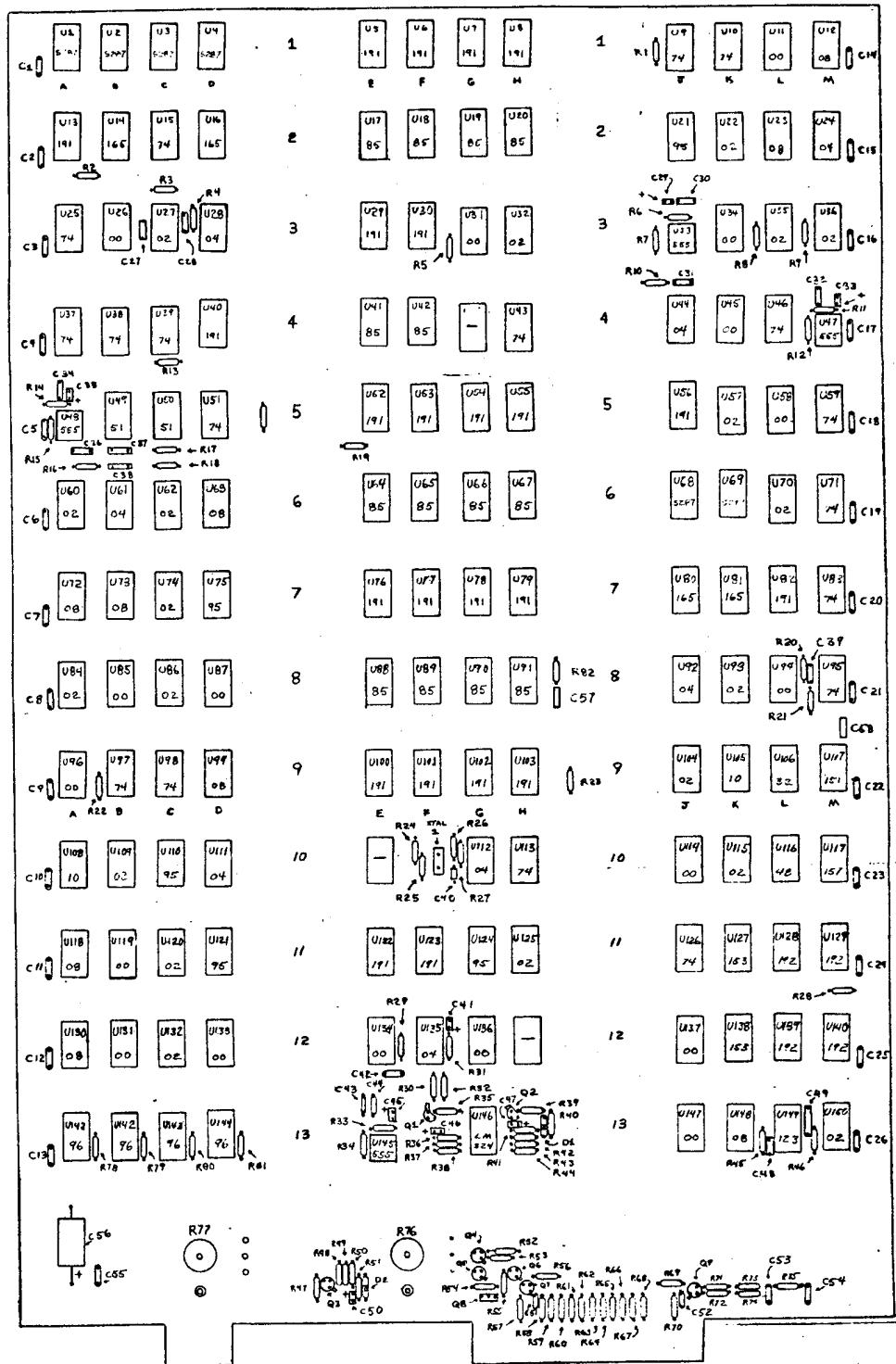
1. } GND  
2. }  
3. } +5V  
4.  
5. } GND  
6.

1. +12v (and one side of SPKR)
2. SPKR (direct)
3. GND
- 4.
- 5.
- 6.
7. \*SML.....(ship move left)
8. \*SMR.....(ship move right)
9. \*SHP GR.....(ship gun right)
10. \*SHP GL.....(ship gun left)
11. \*SBF NO.....(ship button fire)
12. SBF NC.....(ship button fire)
13. \*PBF NO.....(plane button fire)
14. \*PBF NC.....(plane button fire)
15. \*PLN SPD FST...(plane speed fast)
16. \*PLN RCCW.....(plane rotate counter-clockwise)
17. \*PLN RCW.....(plane rotate clockwise)
18. COIN.....(coin drop)
19. GND
20. ANT.....(anti-static antenna)
21. VIDEO RETURN
22. TV VIDEO

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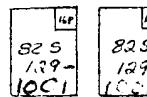
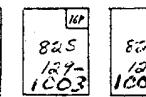
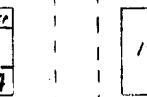
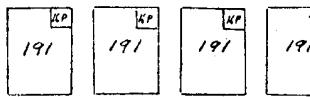
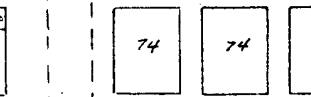
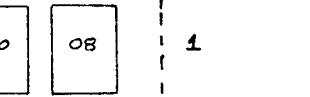
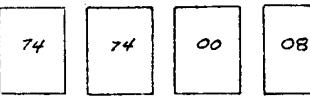
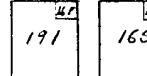
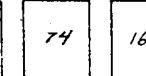
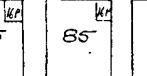
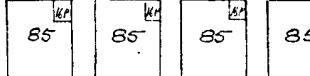
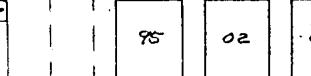
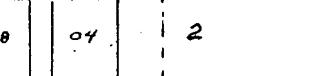
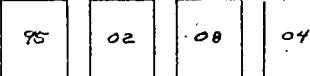
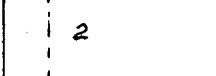
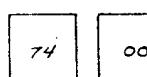
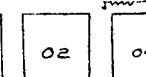
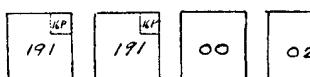
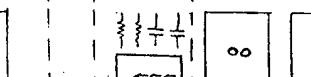
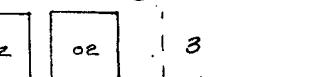
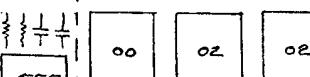
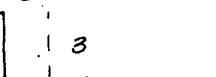
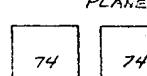
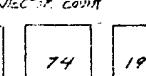
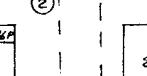
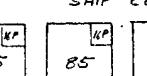
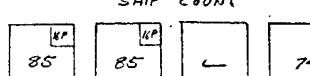
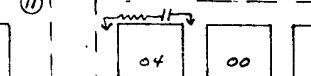
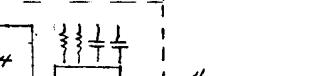
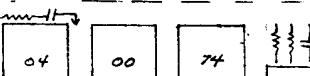
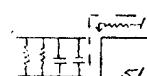
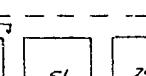
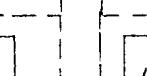
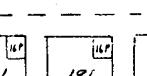
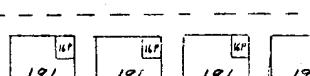
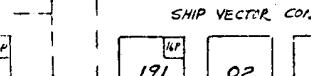
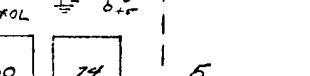
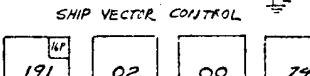
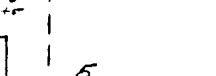
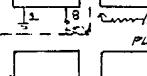
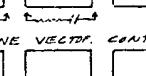
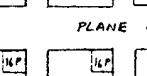
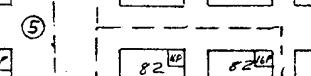
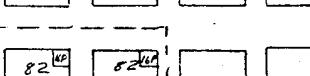
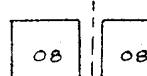
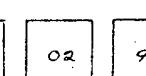
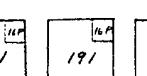
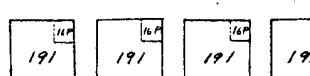
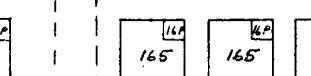
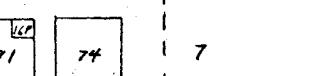
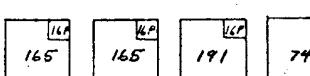
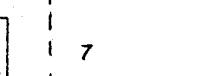
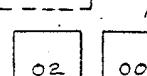
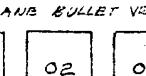
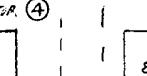
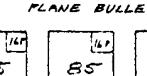
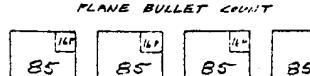
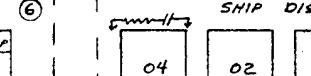
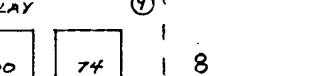
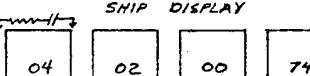
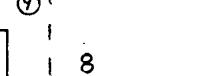
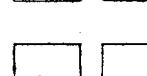
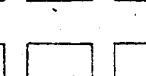
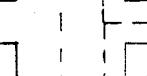
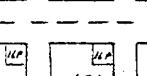
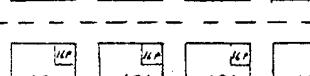
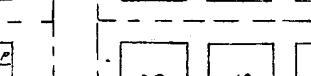
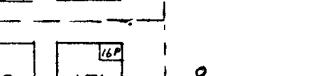
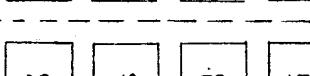
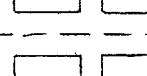
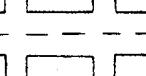
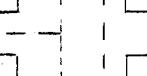
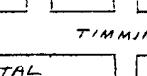
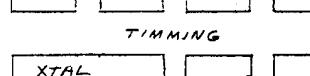
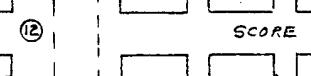
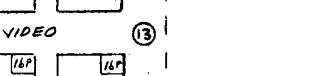
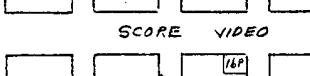
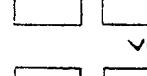
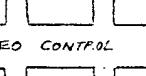
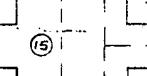
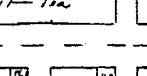
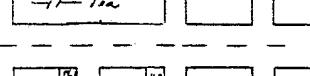
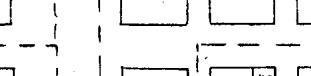
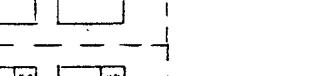
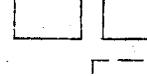
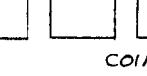
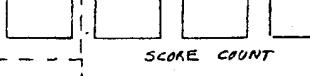
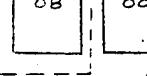
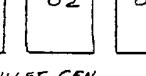
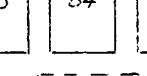
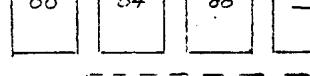
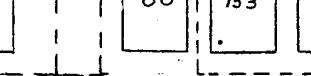
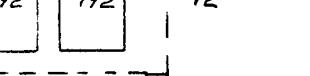
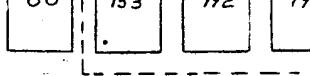
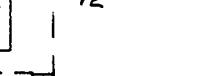
BY *Exidy*

LOGIC DIAGRAM 1A



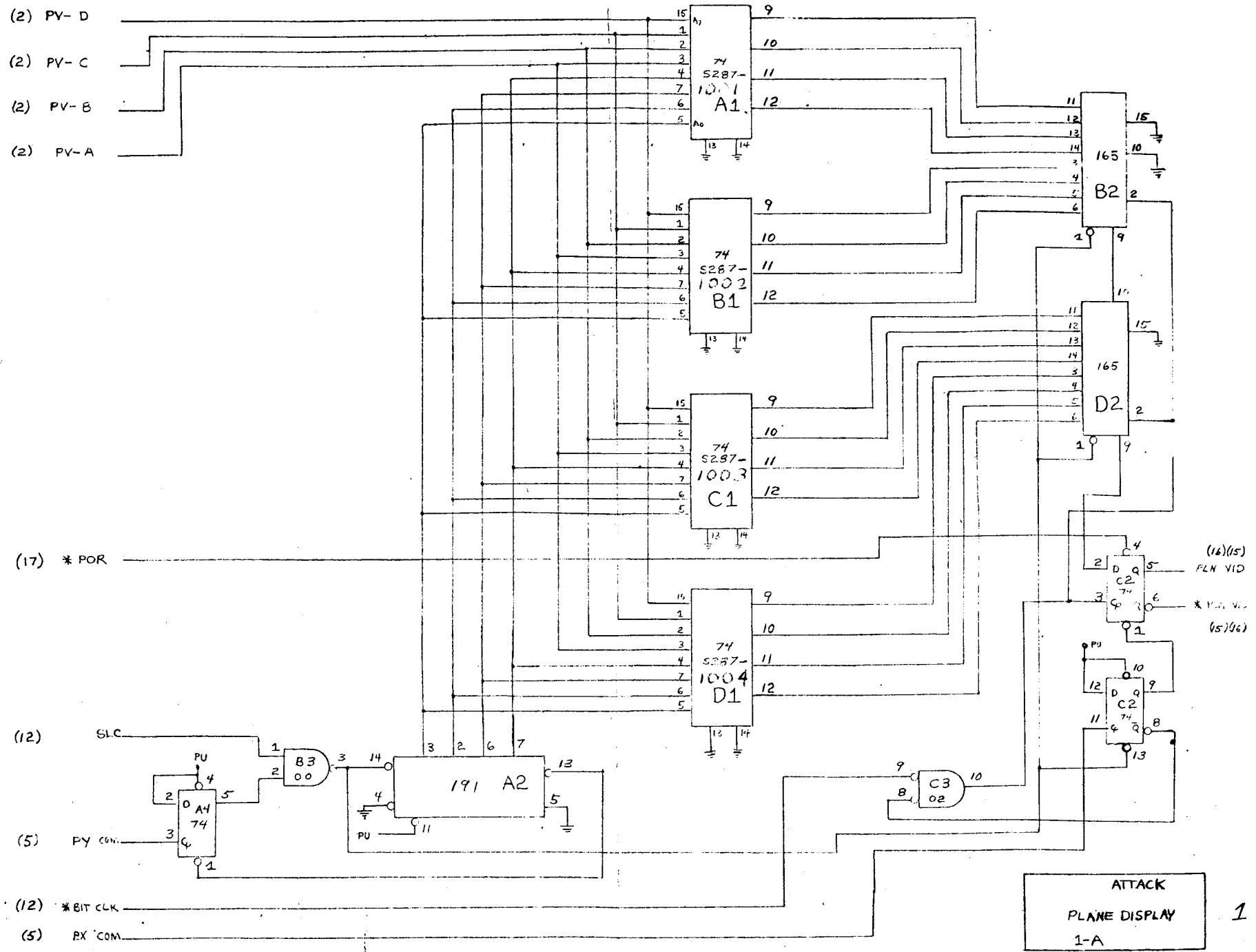
**COMPONENT LOCATION**

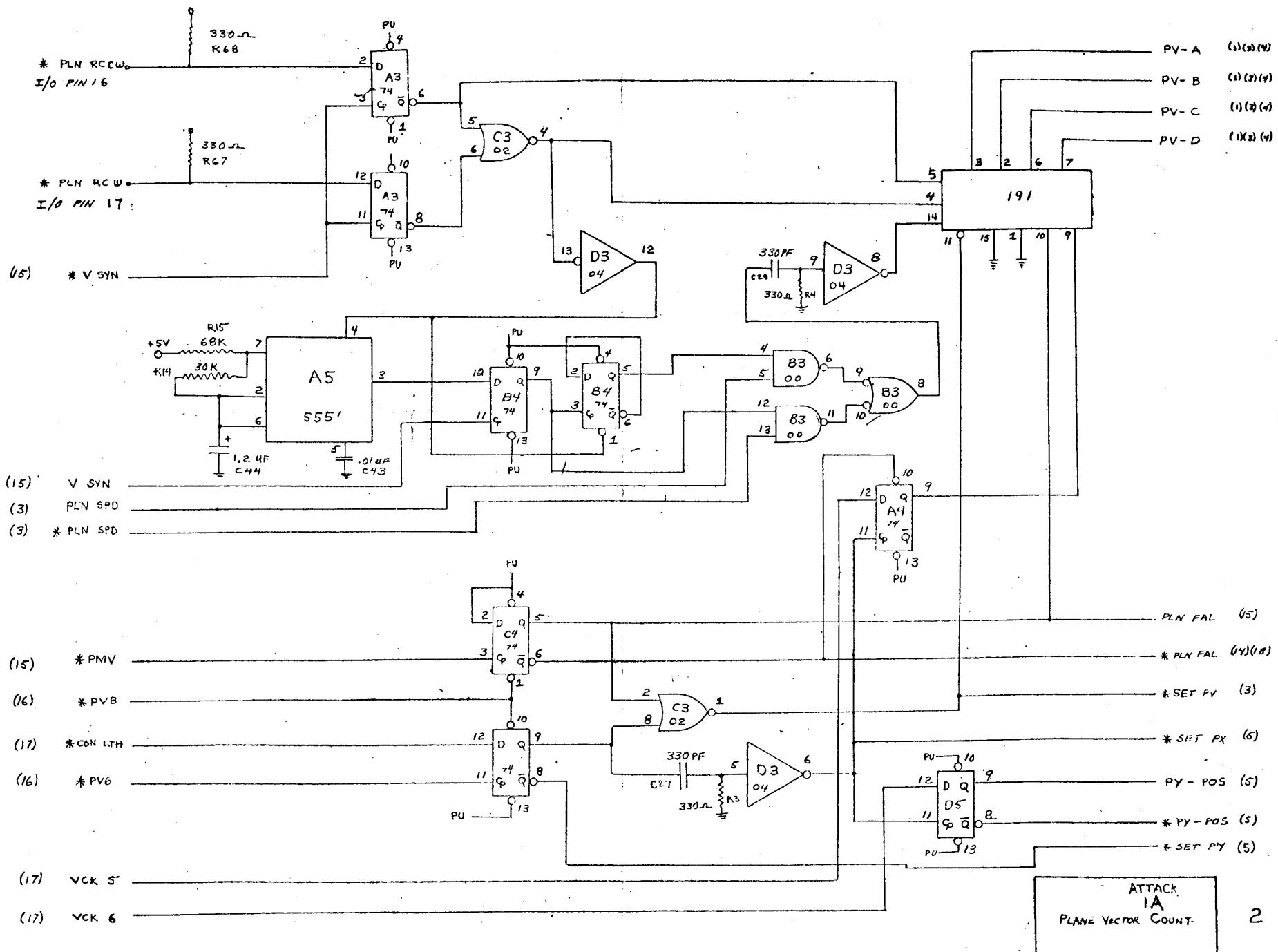
1-A      ATTACK

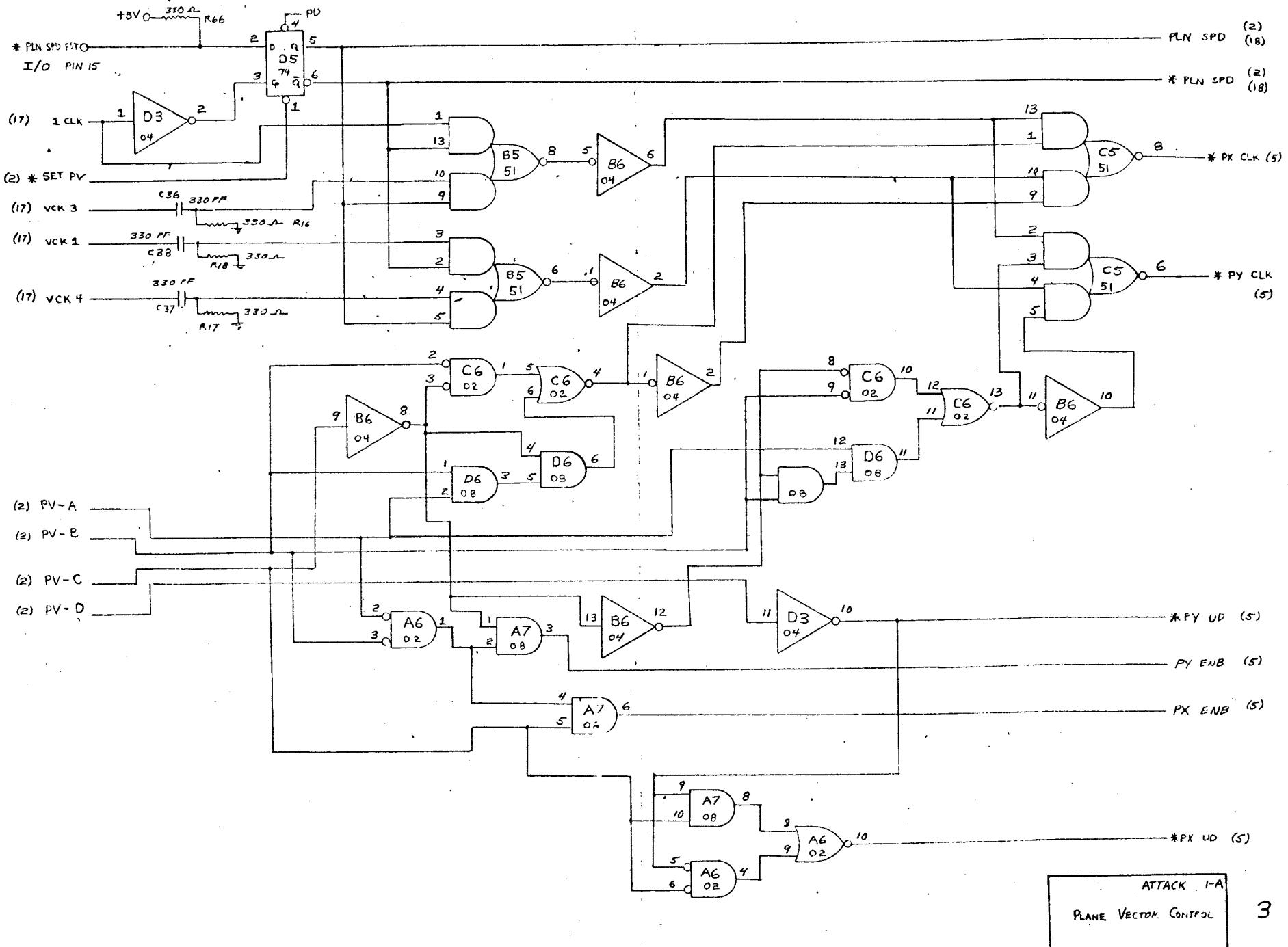
	A	B	C	D	E	F	G	H	J	K	L	M	
1								FG-MI-A					1
2													2
3													3
4													4
5													5
6													6
7													7
8													8
9													9
10													10
11													11
12													12
13													13

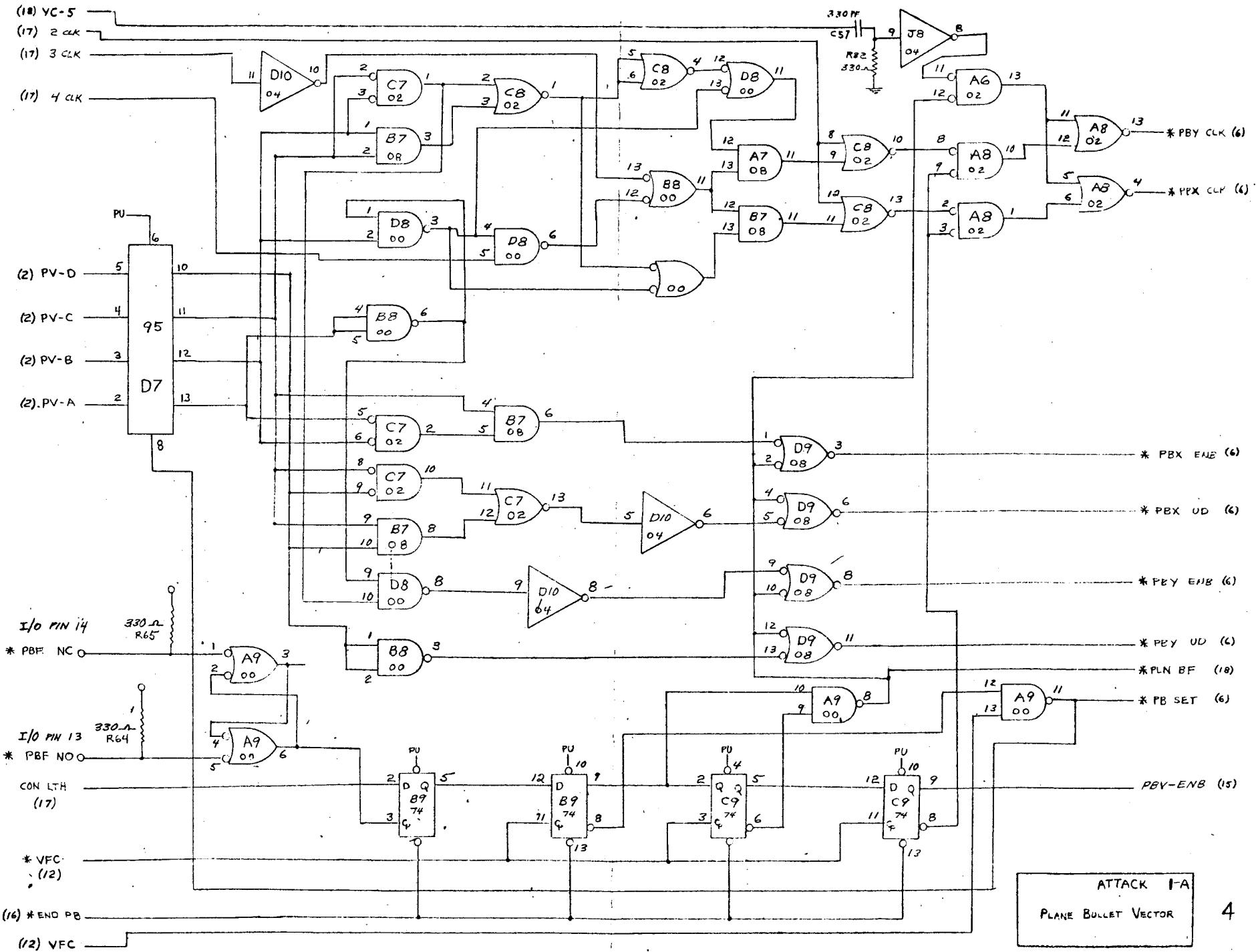
1-A  
ATTACK

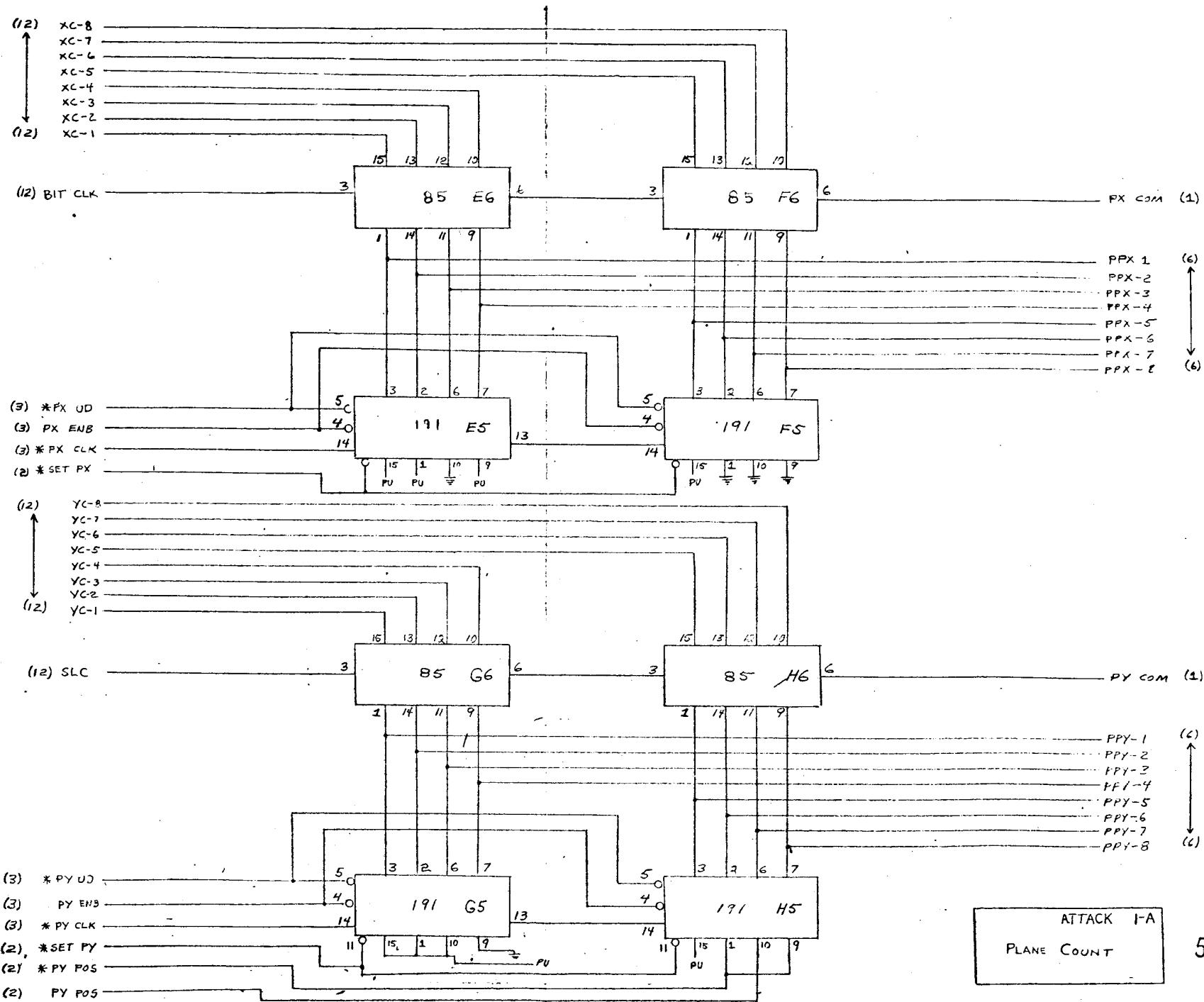
IC LOCATION

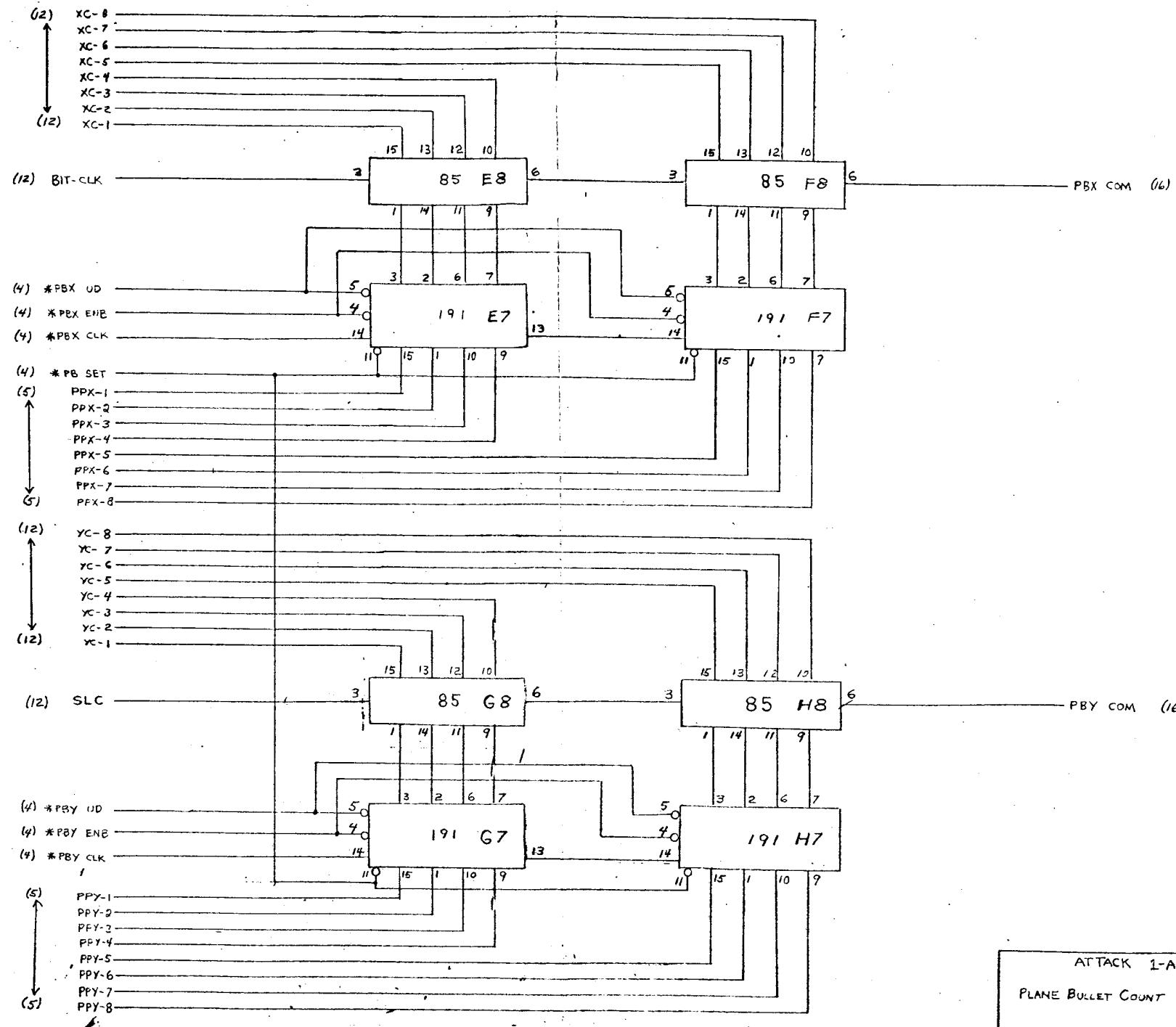


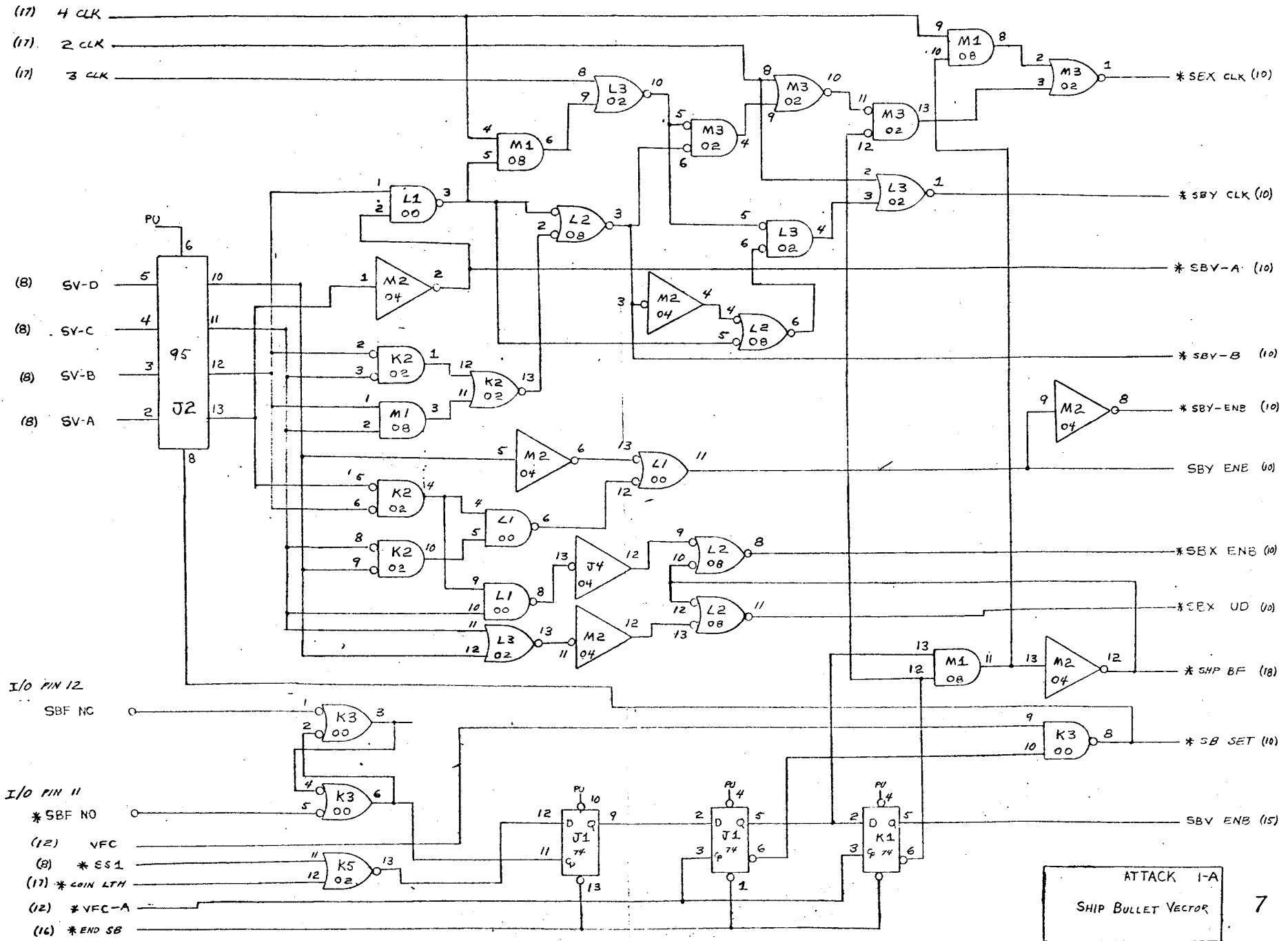


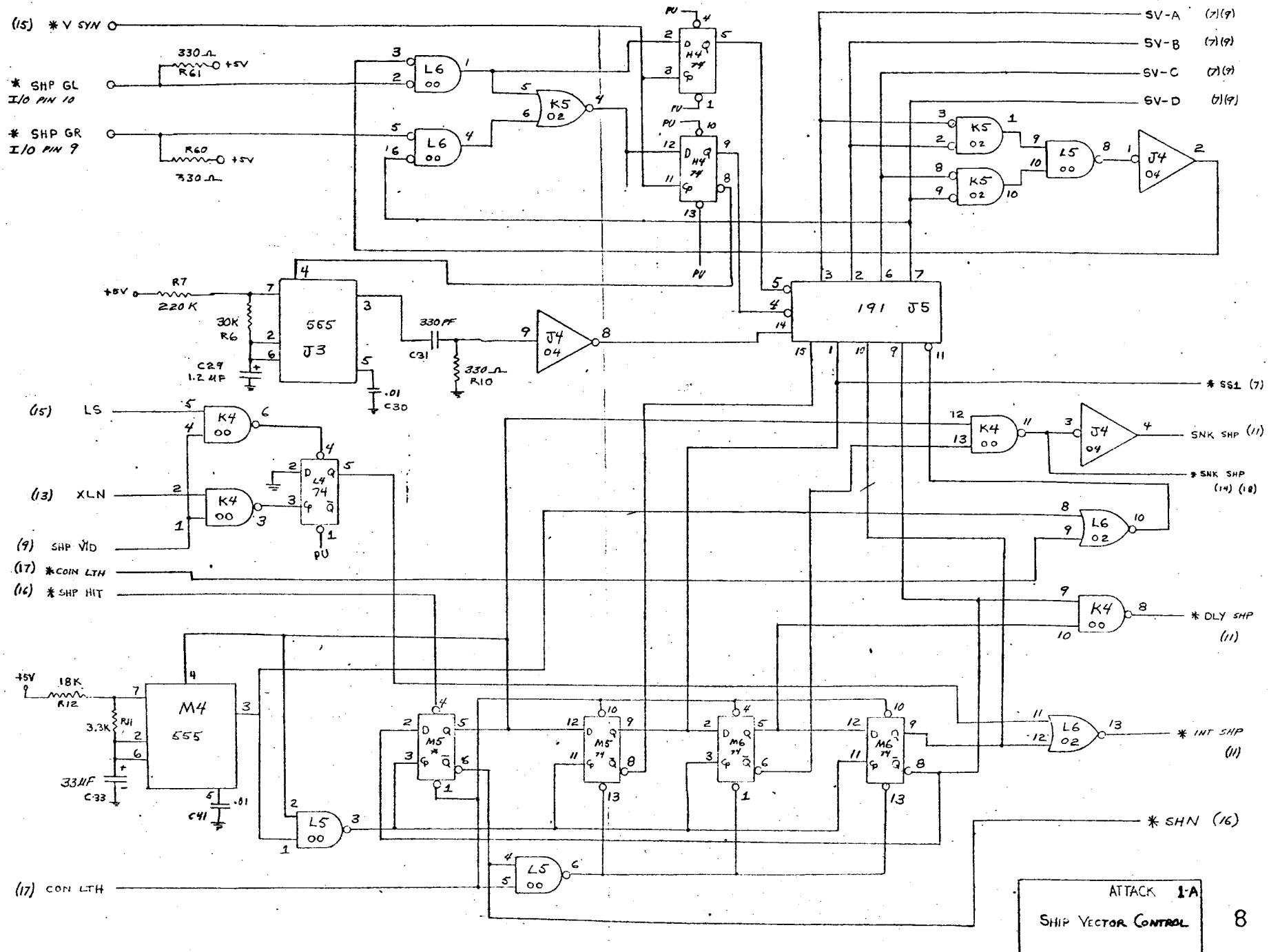


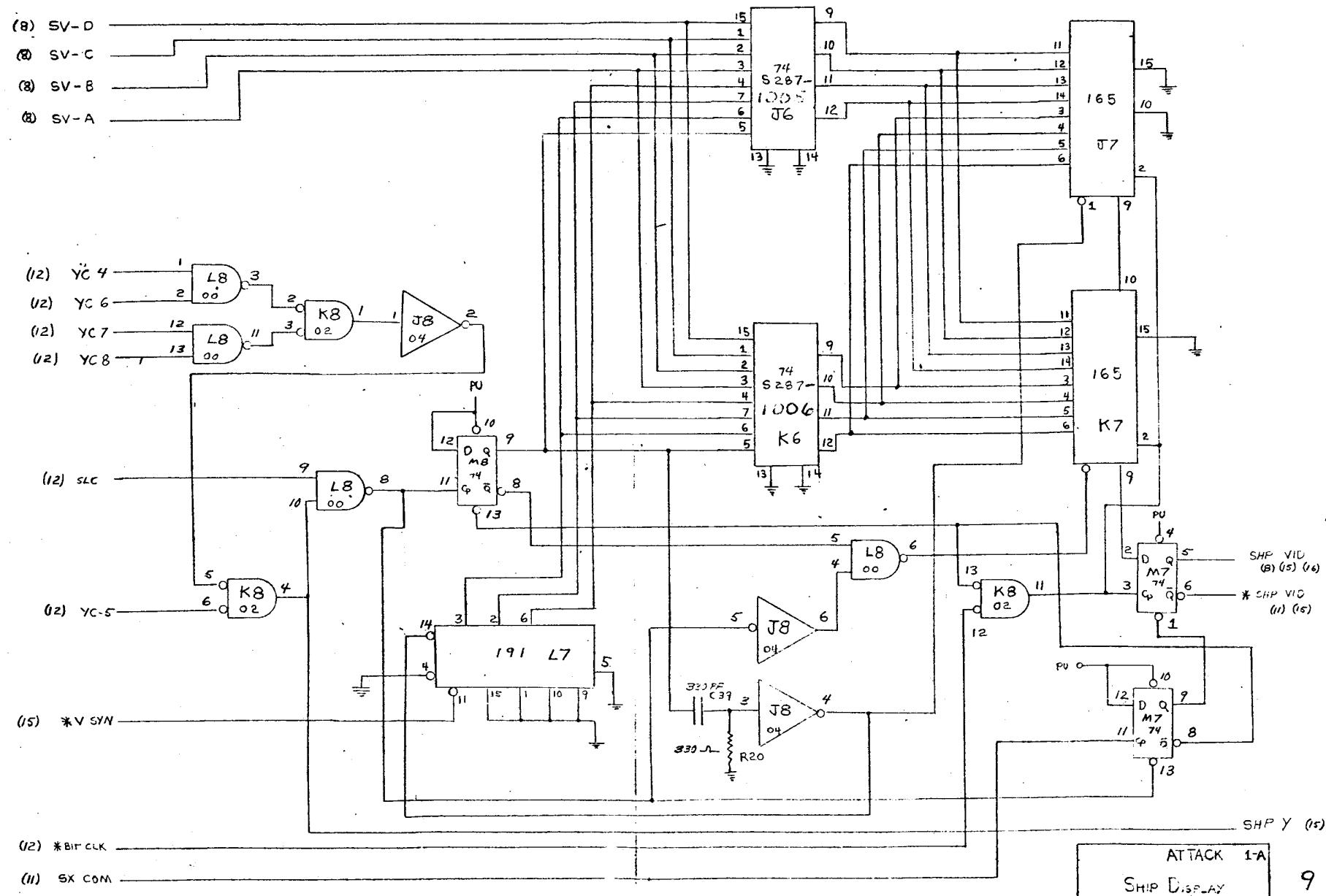


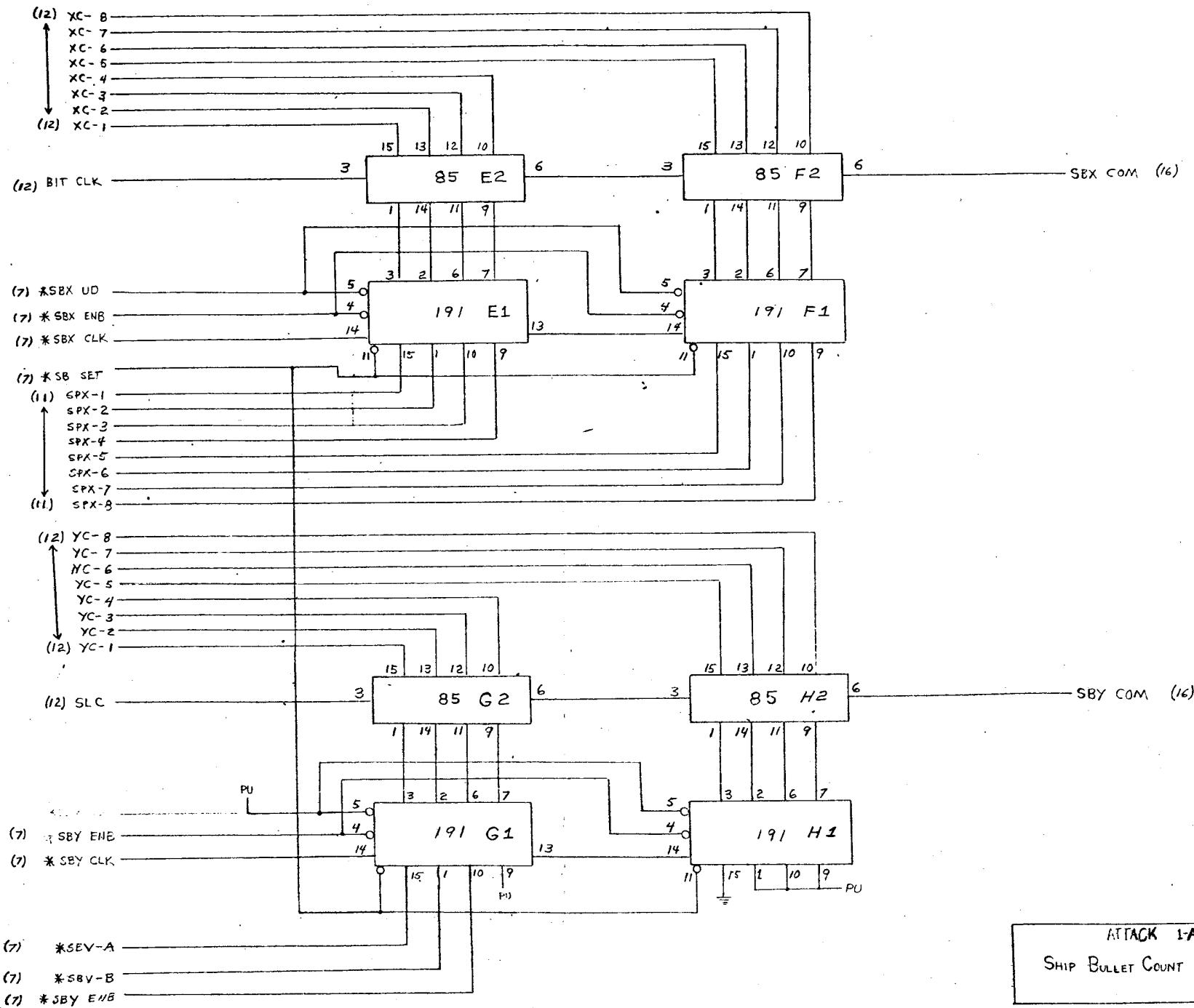




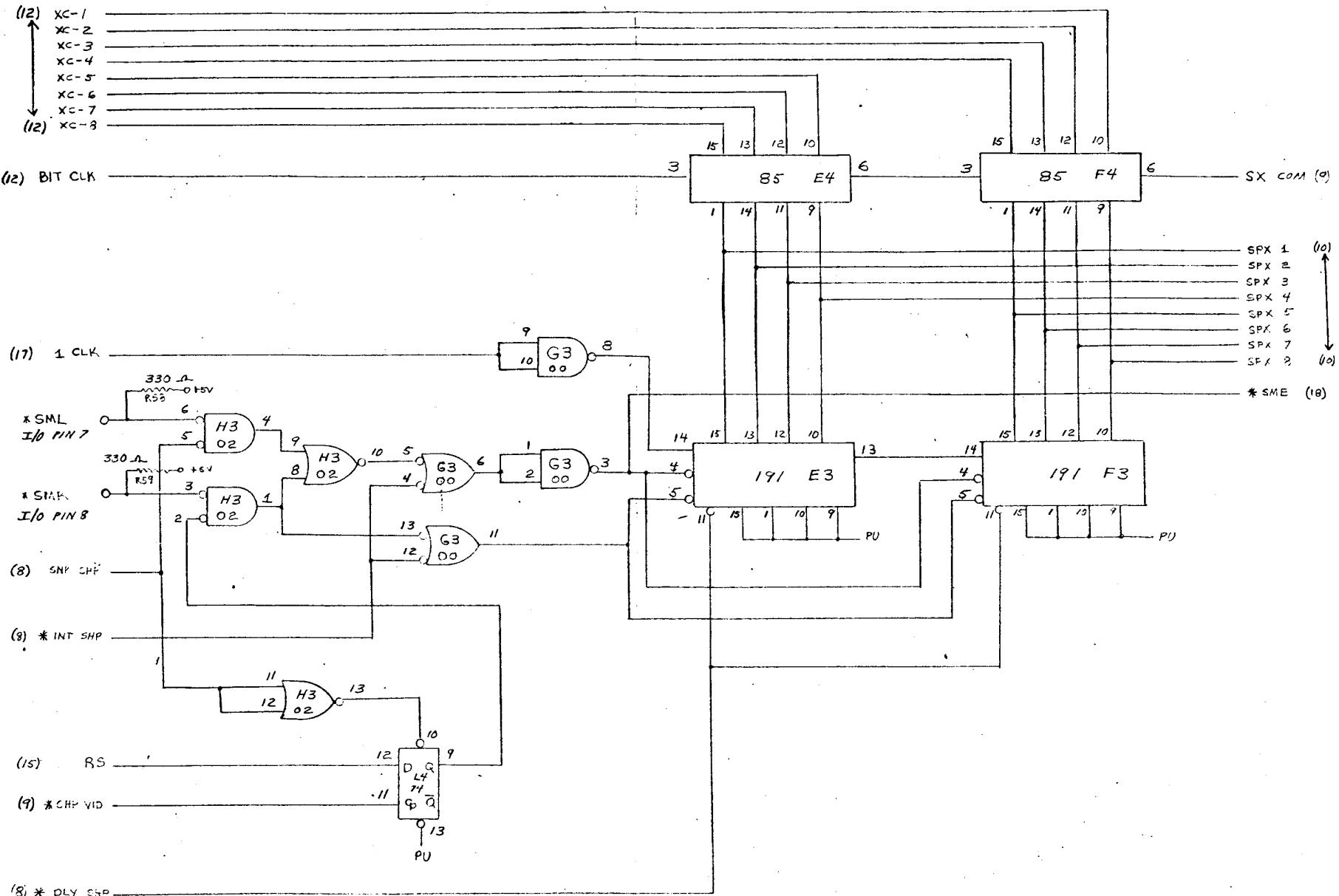




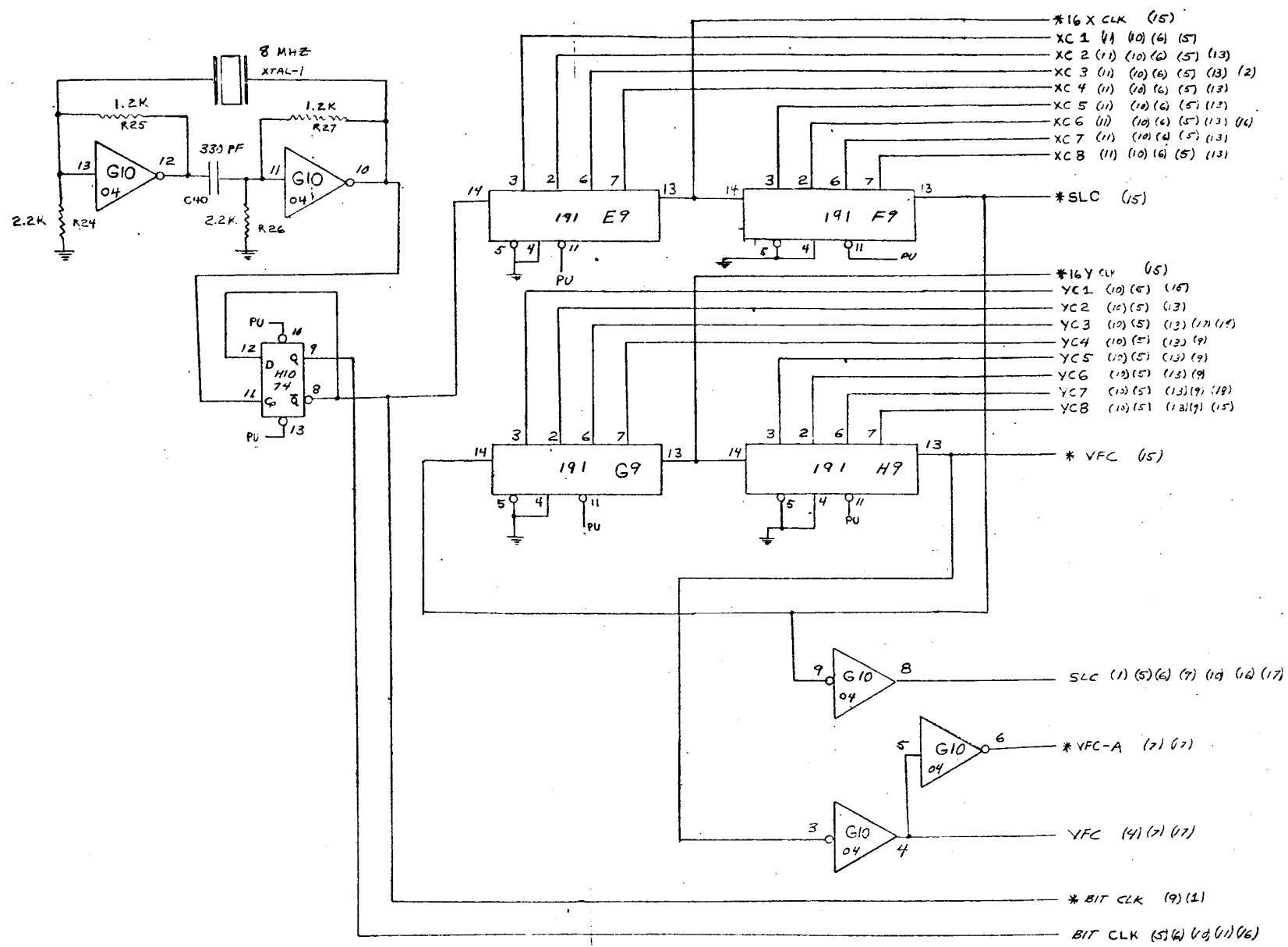




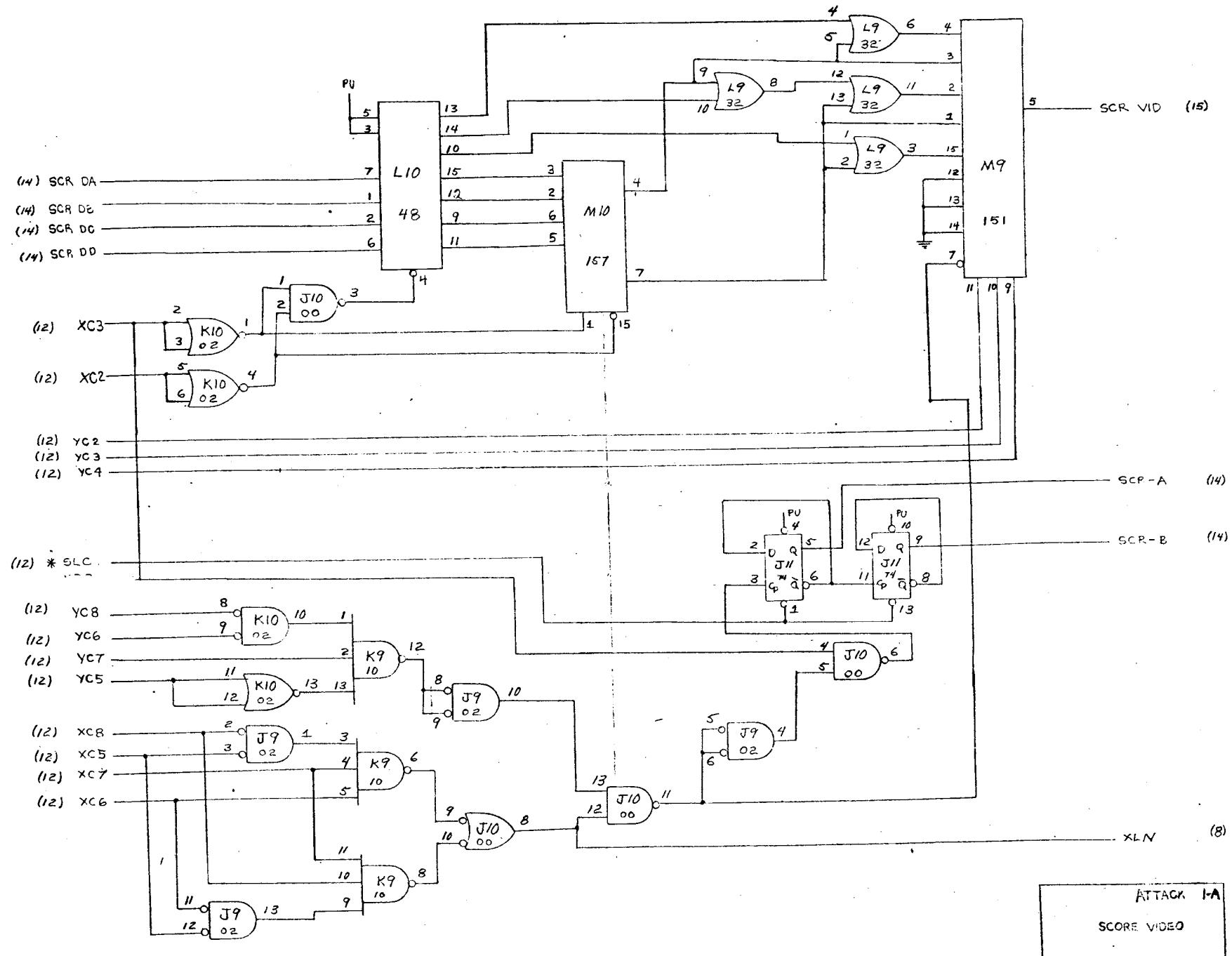
ATTACK 1-A  
BULLET COUNT

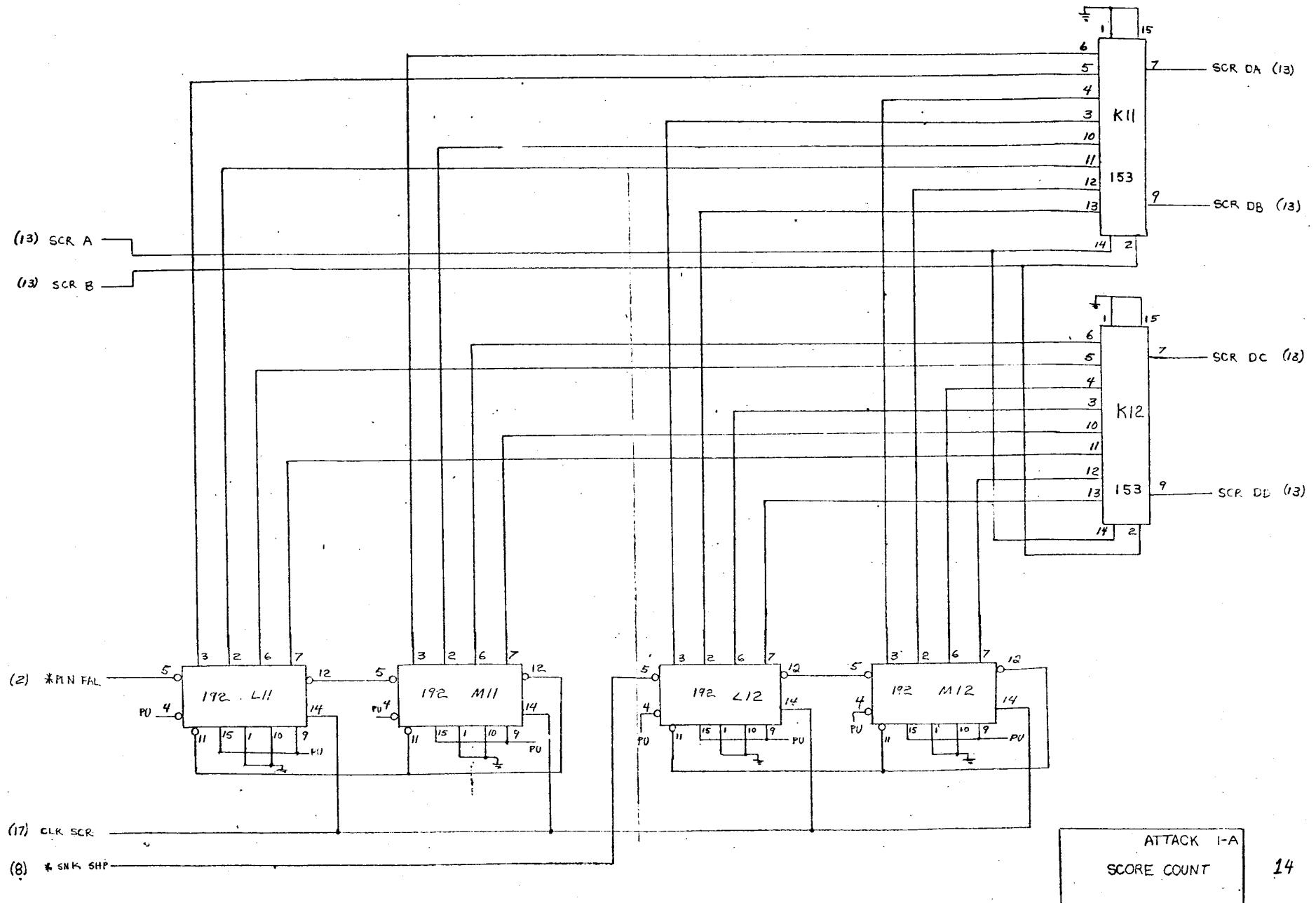


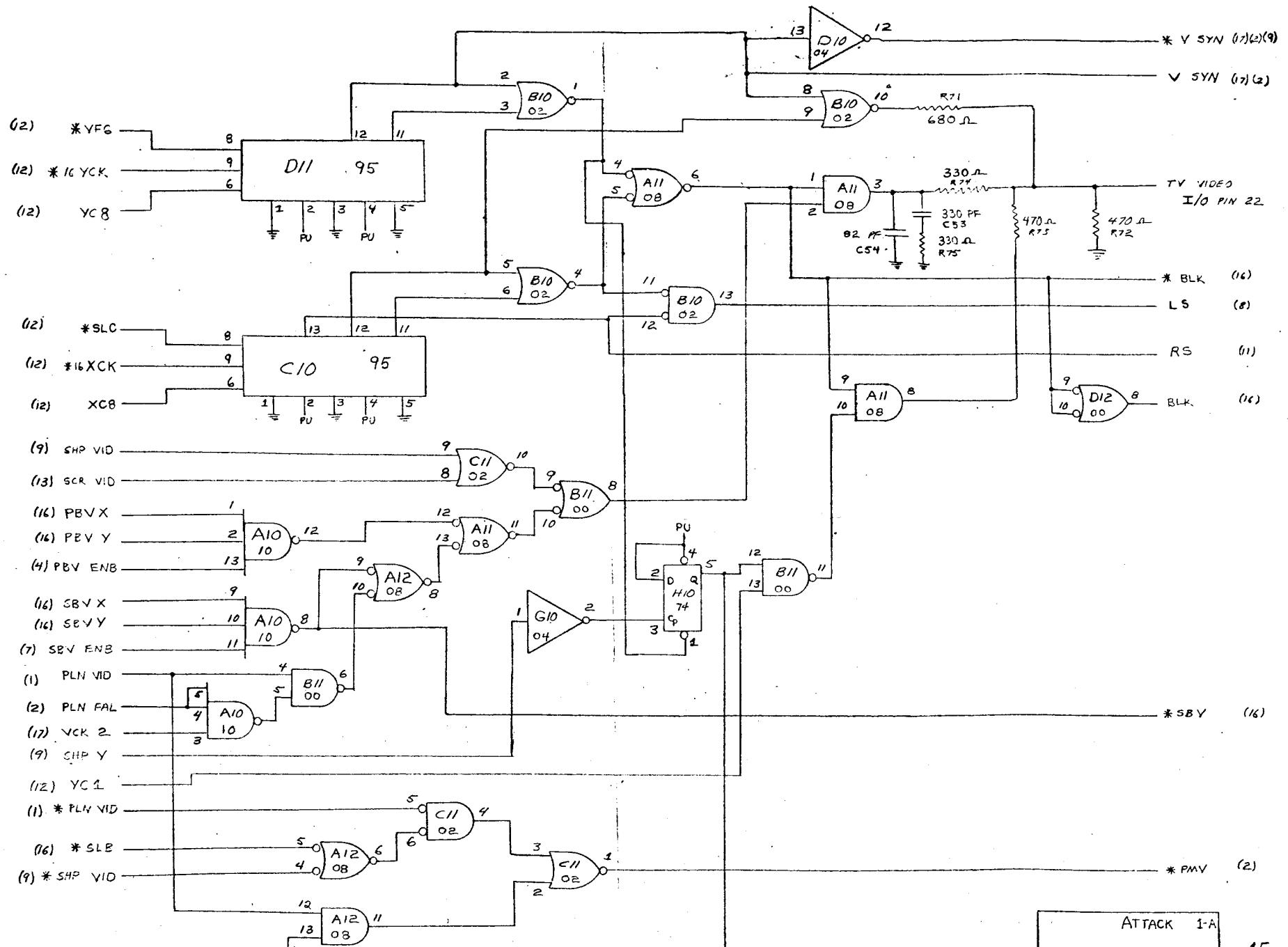
ATTACK 1-A  
SHIP X COUNT

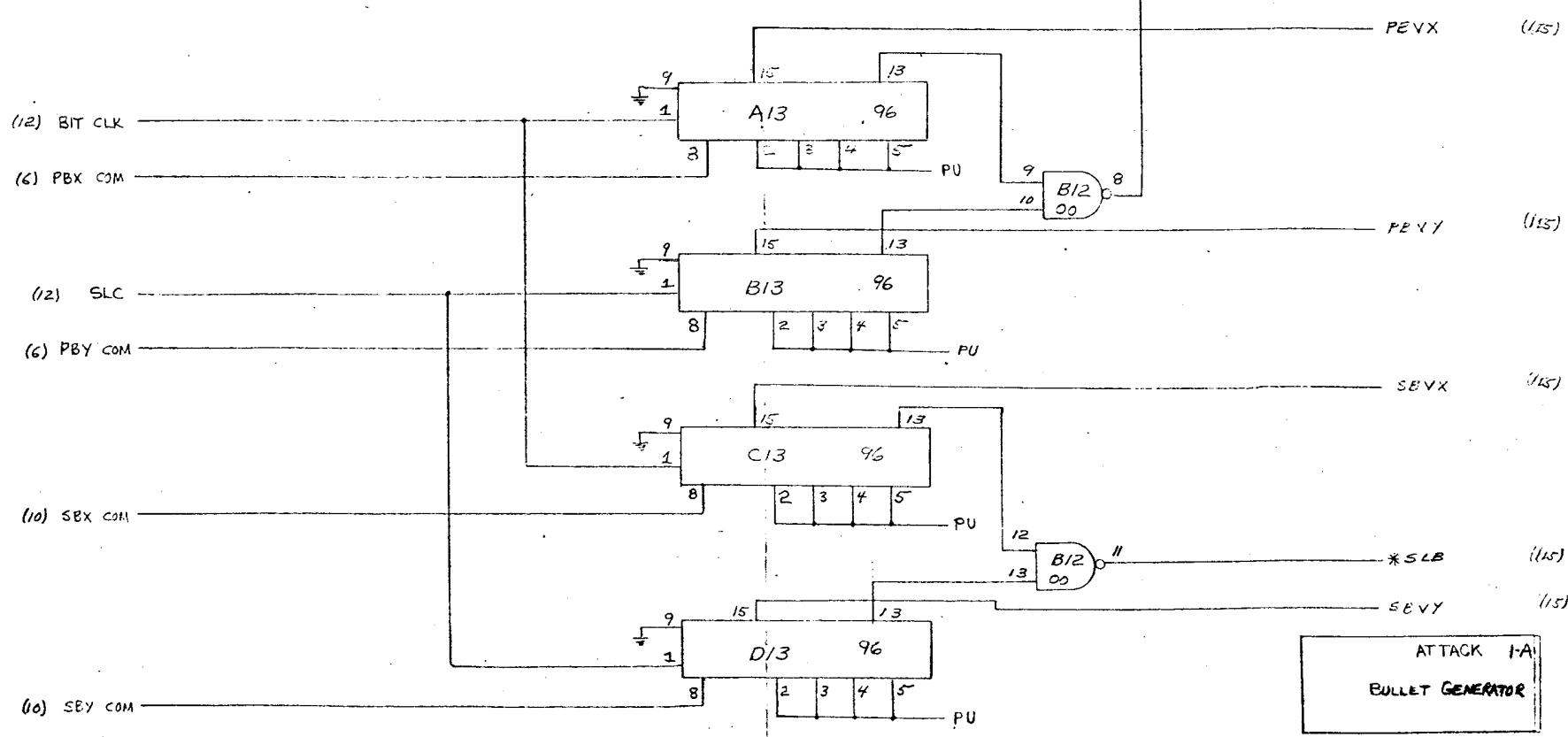
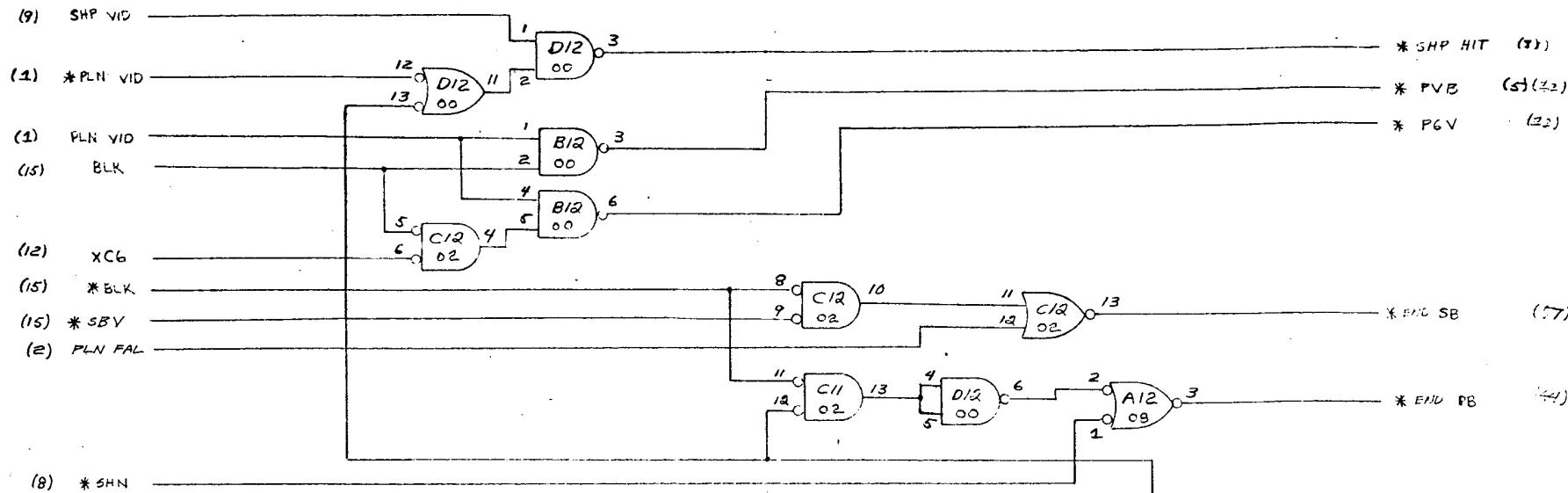


ATTACK 1-A  
TIMING









(12) \*VFC

(21) SLC

(15) VSYC

(5) \*VSYC

VCK 1 (8)  
VCK 2 (65) (10)  
VCK 3 (12) (10)  
VCK 4 (3) (12)  
VCK 5 (18) (2)  
VCK 6 (5) (2)

